

PATENT
Atty. Dkt. No.: 8036-USI (23336-2059)

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IN THE CLAIMS

1-18 (Cancelled)

19. (Currently Amended) A method for treating a non-neutral pH hazardous material spill comprising:

producing a slow draining non-neutral pH foam by foaming an aqueous foamable concentrate with non-neutral pH aqueous liquid, the concentrate being tolerant to the non-neutral pH of the aqueous liquid in that the non-neutral pH aqueous liquid continues to drain slowly during treatment from the non-neutral pH foam after being deployed over a non-neutral pH hazardous material spill; and

controlling a pH of the non-neutral pH aqueous liquid to be opposite to a pH of the non-neutral pH hazardous material spill; and

deploying the non-neutral pH foam over ~~a~~ the non-neutral pH hazardous material.

20. (Currently Amended) The method of claim 19, wherein the pH of the non-neutral pH liquid has a pH of is controlled to be less than 4.5 and forms an acidic foam that is deployed over caustic spills.

21. (Currently Amended) The method of claim 19, wherein the pH of the non-neutral pH liquid has a pH of is controlled to be greater than 9.5 and forms a caustic foam that is deployed over acidic spills.

22. (Currently Amended) The method of claim 19, wherein the non-neutral pH foam remains as a ~~substantially~~ continuous blanket of substantially constant thickness over the spill for at least about 15 minutes as the liquid drains from the non-neutral pH foam.

23. (Currently Amended) The method of claim 19, wherein the non-neutral pH foam remains as a ~~substantially~~ continuous blanket of substantially constant thickness over the spill for at least about 30 minutes as the liquid drains from the non-neutral pH foam.

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24. (Currently Amended) The method of claim 19, wherein the non-neutral pH foam remains as a ~~substantially~~-continuous blanket of substantially constant thickness over the spill for at least about 60 minutes as the liquid drains from the non-neutral pH foam.

25. (Currently Amended) The method of claim 19, wherein the non-neutral pH foam remains as a ~~substantially~~-continuous blanket of substantially constant thickness over the spill for at least about 15 minutes, as the liquid drains from the non-neutral pH foam, when a difference between a pH of the foam and a pH of the spill, prior to deployment of the non-neutral pH foam, is 8 pH units or more.

26. (Currently Amended) The method of claim 19, wherein the non-neutral pH foam remains as a ~~substantially~~-continuous blanket of substantially constant thickness over the spill for at least about 15 minutes, as the liquid drains from the non-neutral pH foam, when a difference between a pH of the foam and a pH of the spill, prior to deployment of the non-neutral pH foam, is 12 pH units or more.

27. (Currently Amended) The method of claim 19, wherein the non-neutral pH foam remains as a ~~substantially~~-continuous blanket of substantially constant thickness over the spill for at least about 30 minutes, as the liquid drains from the non-neutral pH foam, when a difference between a pH of the foam and a pH of the spill, prior to deployment of the non-neutral pH foam, is 8 pH units or more.

28. (Currently Amended) The method of claim 19, wherein the non-neutral pH foam remains as a ~~substantially~~-continuous blanket of substantially constant thickness over the spill for at least about 30 minutes, as the liquid drains from the non-neutral pH foam, when a difference between a pH of the foam and a pH of the spill, prior to deployment of the non-neutral pH foam, is 12 pH units or more

29. (Currently Amended) The method of claim 19, wherein the non-neutral pH foam remains as a ~~substantially~~-continuous blanket of substantially constant thickness over the spill for at least about 60 minutes, as the liquid drains from the non-neutral pH foam, when a difference between a pH of the foam and a pH of the spill, prior to deployment of the non-neutral pH foam, is 8 pH units or more.

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30. (Currently Amended) The method of claim 19, wherein the non-neutral pH foam remains as a ~~substantially~~ continuous blanket of substantially constant thickness over the spill for at least about 60 minutes, as the liquid drains from the non-neutral pH foam, when a difference between a pH of the foam and a pH of the spill, prior to deployment of the non-neutral pH foam, is 12 pH units or more.

31. (New) The method of claim 19, wherein the non-neutral pH aqueous liquid drains from the non-neutral pH foam sufficiently slowly so as to avoid excessive heating of the spill due to at least one of heat of solution and heat of neutralization.

32. (New) The method of claim 19, wherein the non-neutral pH foam scrubs, in-situ, non-neutral fumes as the fumes are released from the spill and pass through the blanket of foam.

33. (New) The method of claim 32, wherein the scrubbing substantially neutralizes the fumes to a pH of between 6 and 8.

34. (New) The method of claim 19, wherein the pH of the non-neutral pH aqueous solution is controlled to be at least 8.5 and to form a caustic foam that is deployed over acidic spills.

35. (New) The method of claim 19, wherein the pH of the non-neutral pH aqueous solution is controlled to be no more than 3.5 and to form an acidic foam that is deployed over caustic spills.

36. (New) The method of claim 19, wherein the pH of the non-neutral pH aqueous solution is controlled to be one of at least 10 and no more than 2.0.

37. (New) The method of claim 19, further comprising adding a caustic agent, independent of and separate from the foamable concentrate, to a liquid to raise a pH of the liquid to form the non-neutral pH aqueous liquid for use on an acidic spill.

38. (New) The method of claim 37, wherein the caustic agent is added to the liquid before or after the foamable concentrate is added to the liquid.

39. (New) The method of claim 37, wherein the caustic agent is added in an amount of at least 3% by weight to the liquid to raise the pH of the liquid.

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40. (New) The method of claim 19, further comprising adding an acidic agent, independent of and separate from the foamable concentrate, to a liquid to lower a pH of the liquid to form the non-neutral pH aqueous liquid for use on a caustic spill.

41. (New) The method of claim 40, wherein the acidic agent is added to the liquid before or after the foamable concentrate is added to the liquid.

42. (New) The method of claim 40, wherein the acidic agent is added in an amount of at least 3% by weight to the liquid to lower the pH of the liquid.

43. (New) The method of claim 19, wherein the foam contains at least 90% by volume non-neutral pH aqueous solution and no more than 10% by volume foamable concentrate.

44. (New) The method of claim 19, wherein the foam contains no more than 96% by volume non-neutral pH aqueous solution and at least 4% by volume foamable concentrate.